Introduction

Passive solar homes are designed to take advantage of local climates by maximizing the energy from the sun to heat and cool the home. In North Carolina, as in all of the northern hemisphere, the sun's path passes through the southern sky on its daily trip west. Therefore, a passive solar home has the highest percentage of windows is on the south side. The sun warms the home in the winter, and shading devices, such as overhangs, are designed to block the sun in the summer months to reduce the amount of cooling necessary. Passive solar design creates an energy efficient, comfortable home that reduces energy consumption that save money as well as valuable resources.

Passive solar design can easily be incorporated into any architectural style given you have the proper site. Such design strategies have been used effectively for hundreds of years. There is a small increase in the cost of construction, but the home has lower annual energy and maintenance costs overall.

There are many benefits to passive solar design for the homeowner and the environment. By reducing energy consumption, the homeowner can save money on utility bills and help prevent air pollution from electricity generating plants that burn fossil fuels. Passive solar design elements make a home comfortable year round while bringing in natural light from the increased glass on the southern side. Natural light reduces energy consumption and provides a visual connection to the outdoors.

This book provides the fundamentals and components of passive solar design. A collection of floor plans that work in a variety of sites in North Carolina are also included in this book. The passive solar house plans in this book are affordable homes that are less than 1300 square feet and focus on energy efficiency.